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**Heritage Learners in the Classroom: An investigation into German Heritage  
Learners' misspellings**

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**Heritage Learners in the Classroom: An investigation into German Heritage**

**Learners' misspellings**

by

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**Heritage Learners in the Classroom: An investigation into German Heritage  
Learners' misspellings**

by

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This study investigates the type of errors made by middle school heritage learners in written German. The errors are classified into four categories: consonant errors, capitalization errors, vowel errors, and deletions. The study finds that compared to previous research regarding German first-grader spelling, these middle school students produce significantly more errors when writing in German. There are four participants, three female and one male, ranging in age from 10-14, all of whom are enrolled in a Saturday school enrichment class and have been identified as heritage learners prior to class placement. The results indicate a need for more intensive and targeted spelling instruction and a portion of the paper is dedicated to teaching implications.

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## **1. Introduction**

In the last two decades, researchers have become increasingly interested in the differences between heritage learners of a language and their peers who are learning a language without prior exposure or knowledge. The field is newly emerging, which is reflected in the varying definitions of what exactly a heritage learner is (Carriera 2004; Lee 2005; Cho, Shin, & Krashen 2004; Comanaru & Noels 2009; Bale 2010). The results of the 2011 National Heritage Learner Survey, written by Carriera and Kagan, recognize two definitions of a heritage learner: one in broad terms, the other more narrowly. Broadly defined, a heritage learner is a learner of a language that is “part of that person’s family or cultural heritage” even if the language has not been spoken in the home and the learner may have “no functional proficiency” in the language (Carriera & Kagan 2011, p. 41). Narrowly defined heritage learners include learners who incompletely acquired a language due to a switch to a different “dominant language” (Carriera & Kagan 2011, p. 41). Narrowly defined heritage learners will have “some level of competence” in the language when they enter the classroom and have stronger “aural proficiency” than in other areas (Valdés as cited in Polinsky & Kagan 2007, p. 371). This narrow definition applies most closely to the students in this study, all of which have at least one German-speaking parent or grandparent and had been raised exposed to the language.

Heritage learners have prompted research in the past 20 years due to their differences from traditional foreign language students. When defining heritage learners narrowly, the students may have skills in areas that are more advanced than

their peers, however may also be lacking in areas that they have not been exposed to. Although heritage learners are different and do have different, and often higher, skill levels, they are still language learners. One key feature of the heritage learner is that they live in a country in which the L1 is different than their heritage language. Therefore, education and daily life is primarily in the L1. In this regard, it is likely that there is an L1 effect on the L2, or heritage language, just as there would be in a foreign language learner setting. There has been a great deal of research investigating the influence of the L1 on various aspects of L2 acquisition, including writing. Woodall (2002) investigated whether language switching in a writing task was affected by L2 proficiency and concluded that students with a lower L2 proficiency will switch to the L1 more frequently than their higher level peers (p. 7). This study was conducted on foreign language students, rather than heritage learners, which is common in research about L1 influences on the L2. Research indicates that often the L1 can influence factors in the L2 across the board.

The present study aims to determine whether or not heritage learners have any influences on the “L2”, in this case the heritage language, which can be traced to the “L1”, in this case the dominant language, English. Since heritage learners come into the classroom with prior knowledge, and specifically since all of the students in this study speak German at a near fluent level, their aural proficiency is quite high. However, since the students have not had much formal written instruction in German, but have in English, I investigated whether or not there was any English influence on their written German, specifically phonological influences.

This study will investigate how heritage learners in a German Saturday school class write in German, what kind of errors they make, and if these errors can be attributed to an influence or transfer from English. Additionally, the paper will provide teaching implications based on the results, which will incorporate ways to teach to the heritage learners' specific needs.



## **2. Previous Research**

Heritage learners often are only able to encounter their heritage language in a formal setting through the use of local Saturday school enrichment classes.

Researchers have looked into the effectiveness, strategies, and lesson planning of Saturday school teachers, who are often not trained teachers, but rather native or nearly-native speakers of the language. Teaching at a Saturday school offers a very limited amount of time to teach students, especially in formal writing and reading skills. It is thus important to understand the pedagogical theories that can best contribute to effective learning in a Saturday school context, as well as the factors that students bring into the classroom. There are a number of studies addressing pedagogical factors in the Saturday school classes, the effects of the L1 on L2 writing, and misspellings in heritage learners' written heritage language.

Douglas (2005) investigated the perceived problems or issues in the Heritage Saturday school context. Since many heritage learners take classes in their heritage language through a Saturday school, Douglas investigated the pedagogical theories and approaches for teaching Japanese heritage learners in a Saturday School setting (2005, p. 60). Douglas cited Sasaki (2001), who found that teachers at Japanese Heritage Learner schools lacked classroom management skills and did not have a complete knowledge of instructional methodology or teaching strategies. In addition, the schools did not offer coherent programs or plans for the teachers (Douglas 2005, p. 60). To address these concerns, Douglas developed a series of pedagogical theories appropriate for teaching young Japanese Heritage Learners, but which can be applied

to most any heritage learning situation. She looks specifically at integrated instruction, developmentally appropriate practice with subsections, and assessment.

Integrated instruction provides students with themes through which the teacher can set up goals across multiple disciplines and allows for varied instruction with a common theme (Douglas 2005, p. 67). This method, which is detailed by Krogh (1997) and cited in Douglas' paper, is widely used in preschools but not in primary grades, although it can be effective for all children (Douglas 2005). By integrating instruction and using overarching themes, students are able to use and learn a variety of skills to understand and learn about a topic.

Douglas also touches on a number of other factors relating to the heritage learner classroom, including multi-age instruction, where students progress at their own rate and are in class with students who are often 3-4 years different in age (2005, p. 68). (The students in the Saturday school classes at the school also vary greatly in age, which can make lesson planning and classroom management even more challenging for an instructor.) However, Douglas points out that a multi-age classroom can provide younger students with the opportunity to learn from their older peers (2005, p. 69). Having a multi-age classroom can provide benefits for both the older and younger children by giving the older students the chance to "teach" younger ones. This process fits into Douglas' view of a learner-centered approach. Douglas believes that, due to the extreme differences between learners in a heritage learner Saturday school context, it is beneficial for students to learn through a learner-centered approach (2005, p. 68). Learner-centered classrooms provide the students with

content they find relevant and interesting, which provides interaction and active activities (Douglas 2005, p. 68). These methods, among others outlined in Douglas' paper, are important to implement in a heritage Saturday school context. They serve two main goals: first, they provide students with effective ways to learn new information as well as skills. Second, they provide the teacher with a way to capitalize on the brief amount of class time.

While it is important to understand the group dynamic and factors of the heritage classroom as a whole, it is also important to take into consideration more specific issues that may relate more specifically to fewer students in the classroom. While teachers do not have the time to address each students' particular needs, there is often an opportunity to address a less common need in the classroom within a short amount of time, such as spelling. Teachers can take the larger issue, in this case spelling, and identify specific issues that may target a few of the students. In this way, teachers can deliver targeted instruction and help students on a more individual basis.

In order to have more targeted and individual instruction for heritage learners, teachers will need to identify the specific differences and difficulties that the heritage learners have. This paper investigates spelling errors in German that arise from English influence. A key study that influenced this paper is Beaudrie (2011), which investigated spelling errors made by Spanish heritage learners.

Beaudrie (2011) investigated fluent Spanish heritage learners enrolled in a university-level Spanish class to see if they consistently made certain spelling errors, and concluded that the heritage learners needed additional instruction in written

accent mark placement as well as inconsistent grapho-phonemic relationships. This study indicates that heritage learners have different needs than traditional foreign language learners.

These differences are addressed in Beaudrie's study, in which she notes that Spanish heritage learners often come into the classroom with low literacy levels, but varying degrees of oral proficiency, and find spelling in the heritage language a major obstacle (2011, p. 136). Despite this, spelling has not attracted much attention from heritage learner scholars. Beaudrie hoped to help fill this gap by identifying common misspellings made by Spanish heritage learners in a Spanish composition course at a major Southwestern U.S. university.

Beaudrie collected data from university students enrolled in Spanish 3, a course offered to fluent Spanish speakers with basic writing proficiency, and included only students for whom this was their first university level Spanish course (2011, p. 138). The data were collected in the form of two written essays, one narrative about either a memorable experience, a previous trip, or high school graduation day, and an opinion piece about the right to bear arms (Beaudrie 2011, p. 138). The topics were chosen to allow for assessment of the students' ability to spell familiar words. The data were analyzed by grapheme, so each word could contain multiple errors. Errors were categorized based on their type.

After categorizing and grouping the errors into four groups, a) misspellings of words with inconsistent or complex phoneme-to-grapheme relationships, b) misspellings of words with regular phoneme-to-grapheme relationships, c) syllable

and word fragmentation errors, or d) accent errors, Beaudrie was able to identify common errors made by Spanish heritage learners (2011, p. 138). This finding allowed for targeted spelling instruction for heritage learners, so that teachers could more efficiently tailor their instruction to the needs of their students. Beaudrie concludes that teachers of Spanish heritage learners should use targeted instruction on the specific misspellings in order to have the strongest impact on written Spanish development (2011, p. 143). Teachers of heritage learners could use this study to help them identify specific errors and target their instruction for the heritage classroom. This targeted instruction can greatly help heritage learners improve their skills, specifically spelling in their target language.

Beaudrie's specific research into heritage learners and their misspellings illuminates very specific instances of differences between heritage learners and foreign language learners. Beaudrie's research provides a great tool for heritage language teachers to understand and identify specific ways in which they can help their heritage learners improve their writing skills. The present paper, along with Beaudrie's, looks specifically at heritage learners as a separate group from foreign language students and addresses how to best teach this group of learners. In order to make this distinction between groups, it is important to know if there really is a measurable difference between heritage learners and traditional learners.

Kondo-Brown (2005) investigated whether or not there is a difference between heritage learners and their traditional peers. Her study addressed differences between heritage learners and traditional foreign language students by breaking the heritage

learners into groups based on their backgrounds. She was able to identify three groups of heritage learners, 1) students with at least one Japanese-speaking grandparent, but without a Japanese-speaking parent, 2) Japanese heritage learners of Japanese descent but without either a Japanese-speaking parent or grandparent, and 3) students with at least one Japanese-speaking parent (Kondo-Brown 2005, p. 563). The students' Japanese ability in listening, grammar, and reading proficiency as well as self-assessed use of Japanese in various domains during the previous month, language choice in communication, and self-ratings of ability to carry out oral tasks (Kondo-Brown 2005, p. 565). These domains were tested through the use of a multiple choice Japanese proficiency test that was developed by the faculty at University of Hawaii at Manoa, where the study was conducted, as well as background information and self-assessment questionnaires developed by the researcher (Kondo-Brown 2005, p. 566). Both the proficiency test and the questionnaires were distributed to all four groups of students, the three heritage learner groups and one foreign language learner group (Kondo-Brown 2005, p. 567). The results of the study showed that heritage learners with at least one Japanese-speaking parent had significantly different proficiency in reading as well as listening and grammatical skills than Japanese foreign language learners (Kondo-Brown 2005, p. 568-569). Contrary to this result, the other two groups of heritage learners, ones who had Japanese heritage but no parents or grandparents who speak Japanese and students who have at least one Japanese-speaking grandparent but no Japanese-speaking parent, did not have significant

differences between their language abilities and those of the Japanese foreign language students (Kondo-Brown 2005, p. 569).

Based on the findings, Kondo-Brown suggests that heritage learners with a parent that speaks the target language should be put into a different track than foreign language students, heritage learners with grandparents that speak the language, and heritage learners with neither grandparents nor parents that speak the language (2005, p. 574). The results indicated significant enough difference in proficiency level with heritage learners with parents who speak the language than the students who don't that the heritage learners with heritage language speaking parents have skills that place them at a higher level.

The solution to the differences of placing heritage learners in a different track may not always work. In a Saturday school context, it may be impossible to separate the students by heritage learners or not. Small enrollment numbers and limited funding for teachers can create a situation in which there is no possible way to separate students by heritage learner or not. Additionally, in my context, the difference in level between the beginners, of which some are heritage learners, and the advanced is so great that simply switching the classes to heritage learners and non-heritage learners will place many students at a disadvantage. In this regard, it is important to incorporate the teaching strategies outlined by Douglas to incorporate both the heritage and foreign language learners, as well as to identify specific areas in which the heritage learners need additional instruction, as Beaudrie does in her study.

### 3. German Phonology/Orthography

In order to address spelling in any language, the language's orthographic depth, or the language's degree of grapheme-to-phoneme correspondence, needs to be addressed (Beaudrie 2011, p. 136). Languages, like English, that have a deep orthography are more complicated to spell (Beaudrie 2011, p.136). German orthography is very transparent, which makes its orthography shallow and therefore, spelling is easier and more consistent than languages with deeper orthographies (Wimmer & Goswami 1993, p. 92). Mapping from phonemes to graphemes, especially with vowels, is very consistent in German, which allows for more ease in spelling and pronunciation than in English, where phoneme to grapheme mapping, especially with vowels, is largely inconsistent (Wimmer & Goswami 1993, p. 92). Goswami, Ziegler, and Richardson give the example of the letter *a*, which is pronounced in three different ways in English (ball, bank, park), but the same way in German (Ball, Bank, Park), where the *a* is pronounced as *ah* (2005, p. 345). A further example of inconsistency in English phoneme to grapheme mapping is *-ough*, which can be pronounced in at least six ways "though", "tough", "thought", "through", "cough", and "bough"<sup>1</sup>. Conversely, vowel combinations in German do not change pronunciation, *-ei* is always pronounced "eye", *-au* is always pronounced like the English "ow", and *-ie* is always pronounced like the English "ee". This consistency makes phoneme-to-grapheme mapping in German simpler than in English.

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<sup>1</sup> *-ough* is a great example to use in class when students are complaining about German being difficult to spell, as well as *-aught*, like laughter, daughter, caught, and draught, etc.



#### **4. Context**

This study investigates the influence of English on written German when used by heritage learners. The students range in age from 10-14 and are all enrolled in a German enrichment school. The school offers three levels of classes, the Vorschule (Pre-school), with children ages 3-5, Grundschule (elementary school), with children 6-8, and Mittelschule, ages 9-14. The classes focus on comprehension and speaking until the Mittelschule, when reading and writing is also taught. In this regard, the students in the Mittelschule classes have had very little instruction in written German. The Mittelschule class is split into two sub-groups, the beginners and advanced. Students are put into the groups based on their comprehension and speaking skills, and not based on writing or reading skills.

Teachers are instructed to use art, music and games to instruct children and speak in German for the majority of the class time. Once the students start the Mittelschule class, they can be expected to use the textbook, *Wir*, published by Klett Verlag. In addition, there are a number of other textbooks available for teachers to use. A typical Saturday lesson in the Mittelschule will involve some sort of written activity, either from a textbook or teacher created, as well as a song, game, or movie clip for cultural information and to make the class more fun. The beginning Mittelschule class focuses on vocabulary acquisition through songs, writing, pictures, and traditional exercises, while the advanced class often has exercises in dictation, narrating images or story boards, or reading comprehension activities. However, the focus of both classes is primarily on helping students improve their written German.

It is important for a teacher of a heritage learner to understand the differences between traditional foreign language learners and heritage learners. The differences create situations in which some students may be more challenged than others. It is important for heritage learner teachers to understand how to teach to the foreign language students as well as the heritage learners, since they often have different needs. After teaching advanced German heritage learners for a year, I began to notice that many heritage students had extreme difficulty when writing German, despite their high level of conversational skills. The kinds of errors they were making and the frequency of these errors were in discord with what I knew about the consistency of phoneme – to – grapheme mapping in the German language. This observation led to the development of the present study. In order to determine the best way to help German heritage learners, I need to understand what errors or types of errors they create when spelling, as well as if the errors stem from a transfer of their English L1. This paper addresses the following questions:

1. What kind of phoneme – to – grapheme errors do German Heritage learners make when writing German?
2. Can these errors be classified?
3. If so, which errors are most prevalent?

## **5. Methodology**

The corpus was obtained from writing samples produced at the end of the Spring 2013 semester by German Heritage learners enrolled in an advanced middle school Saturday school class. This class is open to students ages 9-14. Placement is determined by the program director and is based on student's previous experience with German. Parents report their children's previous experience and indicate if students are exposed to the language outside of class (due to having German family members or having lived in Germany). Only students who had a parent or grandparent that spoke German with or around the student were selected for the study. The heritage learners typically had high oral proficiency, due to exposure growing up, but received little or no formal education in written German. Non-heritage learners were excluded since all their knowledge comes from formal education and they had received additional formal education in written German.

This Mittelschule class is the first class in which reading and writing is emphasized rather than conversational skills. The students have had very little formal education in written German, but speak at a very high or even fluent level. The lack of formal written education in German creates a discord between their writing level and speaking level and this discord is what prompted this study. The study was approved by the University of Texas Institutional Review Board (IRB) in April 2013 and each participant signed an assent form and their parents signed a parental consent form.

Students were given a mix of dictations as well as free writing exercises. The dictations were created by the teacher to be in-line with the subject matter or taken from authentic news sources targeted towards children (Appendices A, B, D, and E). The free writing exercises consisted of a series of pictures that the students were asked to narrate. The pictures showed everyday activities, such as taking a day trip (Appendix C). The pictures were chosen to reflect activities known in common life in America, as to be sure that the students would not encounter cultural features that they would not understand. Both a dictation and free-writing sample were chosen because they elicit different ways of writing. With the dictation, students hear the sounds of the words and are asked to transcribe the text. This allows for insight into the way students process the sounds of the German language. The free-writing example allows for insight into individual interpretation of the German language, while also incorporating phonetics.

## **5.1 Participants**

Writing samples were obtained from four heritage learners of German ranging in age from 9-12. There were three girls and one boy. All students were born in the United States and have at least one parent or grandparent that is German or has lived in Germany and speaks German with their children. All students were enrolled in the same class.

## **6. Results**

After collecting and analyzing the data, it was clear that this population of heritage learners make many errors when writing in German. In fact, on average, students misspelled more than half of the words in the dictation or text. It should be noted that it is rare for German students to have as many spelling errors as these heritage learners. Wimmer and Landerl summarize two studies which compared English and German spellers, showing that first-grade English learners have more difficulty with vowel combinations than similar German learners (1997, p. 84). In their study, they tested students on vowel spelling by providing 24 word-pairs chosen for similarity in spelling, pronunciation and meaning between English and German. The learners were given the skeleton of the word without the vowels and an experimenter read the word out loud along with a sentence for context. The students were instructed to insert the missing vowels into the skeleton spelling. Results showed that German learners had fewer misspellings than English learners in 19 of the 24 words, while English learners had fewer misspellings in only five of the 24 words (Wimmer & Landerl 1997, p. 86). The second study investigated spelling by German students overall and found that students with only 8-9 months of instruction, German children produce correct or phonemically acceptable spellings, with few phonologically caused spelling difficulties (Wimmer & Landerl 1997, p. 93). The results of these two studies show that German students of a much younger age have much fewer spelling errors than are present in the heritage learners of this study.

From the corpus of 331 words, there were 210 misspellings. (While my analysis does take into account each error, meaning one word could have multiple errors, the following table only counts each word as incorrect one time. It does not address the number of errors per word.) Table 1 shows the breakdown of number of misspellings per sample as well as the percent errors per sample sorted by type of sample by all heritage speakers.

Table 1. The totals and percent errors per sample separated by sample type for all heritage speakers. See Appendix J for each sample and its gloss.

Text Sample	Text Name	Total number of Words (per sample)	Total Misspellings (per sample)	Percent Misspellings (per sample)
Dictation	Ostereier-Rekord (Easter Egg Record)	34	1. 20 2. 23 3. 21	1. 58.8% 2. 67.% 3. 61.7%
Narration	Berlin Geschichte (Berlin Story)	1. 7 2. 5 3. 13 4. 7 5. 5 6. 6 7. 7 8. 4 9. 7 10. 8 11. 4 12. 4 13. 4	1. 4 2. 5 3. 10 4. 2 5. 3 6. 2 7. 3 8. 2 9. 3 10. 4 11. 2 12. 2 13. 3	1. 57.1% 2. 100% 3. 76.9% 4. 28.6% 5. 60% 6. 33.3% 7. 42.9% 8. 50% 9. 42.9% 10. 50% 11. 50% 12. 50% 13. 75%
Dictation	Obst und Gemüse machen fröhlich! (Fruit and vegetables make people happy!)	74	1. 46	1. 62.2%
Dictation	Hausarbeit (Chores)	74	1. 49 2. 52	1. 66.2% 2. 70.3%
Dictation	Bauernhof (Farm)	81	1. 49 2. 37	1. 60.5% 2. 45.7%

This table shows that, although there is some variation in percent error, the majority of samples had an error rate of higher than 50%. The table separates the data by type of writing task, the name of the writing task, and then each sample individually. The number of samples per task varies between 1 and 3 for dictations, and lists each individual sentence as a new sample for the narration task. Although there were four students in the study, there was never a day during data collection where all four were present, which accounts for the varying dictation sample numbers. The chart has a column for the total number of words per sample, as well as the total number of misspellings separated by sample number. From this, a total percent error per sample was calculated. The narration task lists the total number of words per sample, since each sample varies in total words based on the nature of the task.

A portion of a sample of the first dictation, Easter Egg Record, shows many of the common errors found. The original sample is indicated in bold, with the correct German spellings in italics underneath the errors. An English gloss is provided below the correct German.

**Sie wolen nemlic die lengste Ostereier kette der welt bastleng und damit ins**

*wollen nämlich längste Ostereierkette Welt basteln*

They wanted to craft the longest Easter egg chain in the world and with that, get a

**Guniss book der recorder kommen.**

*Guinness Buch Rekorde*

place in the Guinness Book of World Records.

This sample shows vowel errors, consonant errors, deletions, and capitalization errors. Most notable is the replacement of the “ä” with “e”, because these two letters



produce the same sound in German, making this a phonemically acceptable misspelling (Wimmer & Landerl 1997, p. 86, 93).

When looking at the narration activity, one sample stands out because of the length as well as number and type of misspellings.

**ich hap mit mine papa zu Den Ice creme gesheft Ice creme geholete.**

*Ich hab(e) meine Papa zu dem Eis Geschäft Eis geholt.*

I got with my father to the ice cream store ice cream (got)

The most interesting errors present here is the very common “i” replacing the “ei”, which is not acceptable in German, as well as the capitalization errors. This learner appears to know that German has different capitalization rules than in English, but does not have command of these rules. The total number and percent of errors per task and sample is broken down in Table 1 and the different types of errors are further analyzed in the discussion.

The errors can be classified into four categories: a) consonant errors, b) capitalization errors, c) vowel errors, and d) deletions. The largest classification of errors was the consonant category.

### 6.1. Consonant Errors

With 106 errors, consonant errors are the most prevalent. There are a few notable errors that were heavily present. The most common error was the spelling of ‘w’, which in German sounds like the English ‘v’, as in “very”<sup>2</sup>. There were 17 errors, 16%, in which students replaced the ‘w’ with a ‘v’, such as “Velt” (Welt – world), “vah” (war – was), and “voche” (Woche – week). There were also a couple of

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<sup>2</sup> This and all following English word comparisons for German pronunciation were thought of myself and not taken from any particular source.

cases in which the ‘w’ was replaced with an ‘f’, such as “fir” (wir – *we*). However, if an ‘f’ was used, it most commonly replaced a ‘v’. In German, the ‘v’ makes the same sound as the English ‘f’ as in “father”. Students replaced the ‘v’ with ‘f’ in such words as “forher” (vorher – *previously*), “fater” (Vater – *father*). Two other common errors to note were the use of ‘ch’ for the German ‘ig’ sound.

The ending ‘ig’ on a word in German sounds similar, but not exactly the same as the ‘ich’ sound. There were a few instances where students replaced the ‘ig’ morpheme with an ‘-ich’ suffix, such as in the word “Ewich” (ewig – *forever*).

In addition to these sounds being similar, the ‘sch’ morpheme and the ‘s + consonant’ morphemes are the same in German. There were three instances in which students encountered the ‘s + consonant’ morpheme and spelled it either as ‘sh + consonant’ or ‘sch + consonant’. When pronouncing a ‘s + consonant’ morpheme, it does sound like an ‘sh’ sound, but is not spelled that way. Examples of this can be found in the words “shpülen” (spülen – *to clean*) and “schpilen” (spielen – *to play*). These errors, and the others listed, made up a good portion of the consonant errors that could be classified. There were many more individual consonant errors that can be found in Appendix F and J.

## 6.2 Capitalization Errors

In German, all nouns are capitalized all the time, as well as the first word of every sentence. Many students capitalized articles, such as “Die” (*the*, feminine singular nominative), “Der” (*the*, masculine singular nominative or feminine singular dative), or “Den” (*the*, masculine singular accusative). Articles are not capitalized in German

unless they are the beginning of a sentence, and in these cases, students were using the articles in the middle of the sentence. There were also cases of verbs capitalized in the middle of sentences, such as “Basteln” (basteln – *to craft*). There were 98 instances of mis-capitalization. The most common capitalization error was lack of capitalization, which made up 75 of the 98 errors, or 76.5%. Many nouns were not capitalized, despite the rule that all nouns are capitalized. Some examples of nouns that were not capitalized are “mutti” (Mutti – *mother*), “haus” (Haus – *house*), “groß britanian” (Großbritannien – *Great Britain*), “auto” (Auto – *car*), and “frau” (Frau – *woman*). Students also, interestingly enough, did not always capitalize the first word of each sentence, a rule that is present in both German and their native language, English. A detailed list of all the errors, and all other capitalization errors, can be found in Appendix G as well as in the original texts, located in Appendix J.

### 6.3 Vowel errors

The next most common error was vowel errors. There were 113 words with vowel errors. Some errors showed up consistently, such as the German ‘ei’ sound, which is pronounced like the English ‘I’. The words “mein” (*my* – masculine or neuter singular), “meine” (*my* – feminine singular or plural), “kein” (*no/none* – masculine or neuter singular), and “keine” (*no/none* – feminine singular or plural) were all consistently spelled as either “mine” or “kine”, regardless of the word having the ‘-e’ ending or not. These errors made up 17.7 % of vowel errors, of 20 out of 113 and a complete list can be found Appendix H.

Other common vowel errors were the use of a singular vowel for a vowel with an umlaut. Traditionally, when spelling out a vowel with an umlaut, it is acceptable to follow the vowel with an ‘e’ instead of using the umlaut (ä – ae, ö – oe, ü – ue). However, the students in this study used a number of other morphemes to represent the umlauts. The letter ‘ä’ was most commonly misspelled, being replaced either with a simple ‘a’, which in German leads to the pronunciation ‘ah’, or ‘e’ which is pronounced in German like ‘eh’, as in “etcetera”. There were 15 instances of ‘ä’ misspellings, which made up 13.3% of the vowel errors. It is interesting to note that the word “längste” (longest) occurred three times in the corpus and was misspelled with an ‘e’ replacing the ‘ä’ twice, and once with an ‘a’. This was the only word in the ‘ä’ misspelling category that was spelled both with an ‘e’ and an ‘a’ (“lengste” and “langste”). Phonetically, the ‘e’ substitution is closest in sound to the proper ‘ä’ sound. Other examples in this category can be found in Appendix H.

After the ‘ä’ misspellings, the next most common misspelling is the spelling of the long vowel sound ‘ie’. Students made 8 of these errors, 7% of total vowel misspellings. These errors were either spelled with only an ‘i’, 4 out of 8 errors, or only an ‘e’, 3 out of 8 errors, or in one case, “ei”. Examples of these are “spilen” (spielen – *to play*) and “spelian” (spielen – *to play*). As in the previous error set, the ‘e’ in this case would also make the same ‘eh’ sound as in ‘etcetera’, which does not correspond with the ‘ie’ sound, pronounced in German like the English ‘ee’, as in “free”. In contrast, the ‘i’ could be pronounced with the same sound as the ‘ie’ morpheme.

The previous error sets make up 43 of the 113 vowel errors, or 38.1%. 24 of the 74 errors are unique and did not occur more than once <sup>3</sup>. Some of the more interesting spelling errors in this category include the use of ‘ou’ to represent three different sounds, the ‘u’, ‘äu’ and ‘au’. The ‘u’ sound in German makes the same sound as the English ‘oo’, as in ‘boo’, the ‘äu’ sounds like the English ‘oy’, and the ‘au’ like ‘ow’. The ‘ou’ errors are shown in the words “Bouch” (Buch – *book*), “ouse” (aus – *out*), and “aufroumen” (aufräumen – *to clean*). Another interesting misspelling is that of the German word “deutlich” (*considerably*), spelled as “doitlich”. This ‘oi’ morpheme does not exist in the German language and is a creative way to spell the word.

#### 6.4 Deletion Errors

The final category of errors is deletion errors. There were 43 words with missing letters. Most commonly this was present in words with double consonants. 31 of the 43 deletion errors were words with double letters that had been spelled with only one letter. Examples are “das” (dass – *that*), “wen” (wenn – *when, if*), or “mus” (muss – *must*). The interesting aspect about these deletions is that many of the deletion spellings are actual German words. However, the double consonant indicates a much different meaning. For example, “das” with only one ‘s’ most often means “*the*” while “wen” means “*who*” or “*whom*”. The other most common deletion is the ‘h’ deletion. Unlike English, many German words have an ‘h’ in the middle of them which causes the preceding vowel to be aspirated. This ‘h’ was left out in 6 cases, and

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<sup>3</sup> The remaining errors can be referenced in Appendix H as well as J.

like the pervious deletions, could cause a new, correct word to be formed. For example, the word “namen” means “*names*”, but when spelled “nahmen”, the word changes from a noun to a verb and is the past tense of “*to take*”. A common misspelling is that of “ihm”, spelled “im”, which changes from “*him*” to “*in*”. These deletions are interesting because they are not only misspellings, they also can change the meaning of the sentence by providing a new word.

## **7. Discussion**

The purpose of this study was to identify what phoneme-to-grapheme mapping errors middle school German heritage learners make when writing in German and if possible, to classify and identify the most prevalent errors. After collecting and analyzing the data, it was clear that this population of students produces more incorrect spellings than correct spellings. As shown in Wimmer and Landerl's studies, German first-grade students make very few errors when spelling (1997, p. 85, 93), although there are some similar errors, such as replacing "ä" with "e" and deletions, especially of double letters or "h" (Wimmer & Landerl 1997, p. 85). Although there are similar errors, the magnitude of errors made by the heritage learners in this study greatly outweighs the number that the German first-graders in these studies make. The fact that these students are younger and have only been learning German spelling for 8-9 months shows that German spelling can be learned relatively quickly.

The errors that the heritage learners in this study make were analyzed and categorized and the most common errors were identified. The highest number of errors occurred in consonant use, most often regarding letters that had similar sounds in English but are represented differently in German. Most frequently, students made errors with the 'w' sound in German writing. In German, the sound of a 'w' makes the same sound as the English 'v', which is what most errors used in place of the 'w'. A few used an 'f', but the majority replaced the German sound 'w' with the English sound 'v'. Another issue that arose in the consonant error category was the insertion

of an 'h' between an 's' and a consonant. In German, the combination of s+ consonant is pronounced as a 'shh' sound, but spelling does not reflect that.

Consonant errors are of particular interest because they do not follow the phonetic patterns of German. Rather, these errors more closely represent the phonetic pattern of English. Further research would need to be done in order to determine if these heritage learners have incorporated a quasi-English phonetic system and applied it to German. Since German phonology is largely consistent, the variation in spelling as well as the high number of errors may indicate that students do not have spelling strategies appropriate to the German language.

Many of these errors seem to indicate that students have tried to "sound-out" how to spell German words, resulting in misspellings and creative interpretations of the words. This study does not specifically address the strategies employed by the students when they are writing, so one cannot know for sure if they are using their L1 writing strategies in English, however there has been research showing that lower L2 proficiency writers use more L1 writing strategies when writing than high proficiency L2 writers (Wolfersberger, 2003; Cites: Arndt, 1987; Cumming, 1989; Raimes, 1985; Uwaza & Cumming, 1989). These studies address specifically L2 writing as a process, not explicitly spelling strategies. However, it seems likely that if writing strategies for texts transfer from the L1 to the L2, that smaller spelling strategies may transfer into the L2 as well.

Writing is an important aspect when learning a language, in fact, Wolff (2002), believes that learning to write and writing in a second language are the "best ways" of



learning that language (p. 108). If this is true, it is very important for students to learn how to spell and write correctly in the second language. The students investigated in this study were chosen because of their unique features. They are able to fluently read texts in German and speak and understand German fluently as well, however their writing is significantly lower in proficiency than any other language domain. Writing is a critical component of their language education at this stage, especially because this may be the last class they take before either high school German, if available, or at all. There are very few high schools in the Austin area that offer German, and it is unlikely that students would continue in college after a four year break from the language. Therefore, I feel it is critical to greatly improve the students' writing ability before they age out of the classes.

Before I can address complex writing topics with these students, they need to have instruction in basic spelling. The results of this study, which showed over 50% errors in almost every writing sample analyzed, indicates that students need to be explicitly instructed in German spelling strategies. As Cook (1997) states, the popular view, correct spelling indicates education and is a "critical factor" in the way people present themselves (p. 474). The heritage learners in this study often express reservation when writing and preface all writing activities with statements about how their writing is "bad" or "awful" and how they are not good at it. There is clearly a need to help these students improve their spelling to become more equivalent with their proficiency in other language domains.

Cook (1997) investigates how adult English learners spell, specifically looking at and classifying errors. One aspect of Cook's analysis into these errors is the roll of the L1 and cites two previous studies, Bebout (1985) and James *et al.*, (1993), which account for errors transferred from the L1 into the L2 regarding spelling (p. 486). These studies, as well as further research showing that L2 learners with low writing proficiency use their L1 writing strategies more frequently than higher proficiency L2 writers, strongly indicates that the heritage learners in this study very well may be transferring strategies from their L1, in this case English, to their German L2 writing. When analyzing the errors, without directly asking the students how they decided on a particular spelling, the data seems to suggest that there is a high level of English interference. Spellings such as "ish" (ich – *I*), "befor" (bevor – *before*), "fater" (Vater – *father*), "mine" (mein – *my*), and "nexte" (nächste – *next*), reflect a spelling that, when following English pronunciation rules, would give the correct German pronunciation. Further research, perhaps a post-writing survey or interview, would allow for a researcher to gain insight into the heritage learners' writing strategies and any transfer or interference from their L1.

## **8. Teaching Implications**

The results of this study indicate that this group of students needs extensive spelling instruction in specific domains. Beaudrie (2011) addresses the need for explicit, targeted spelling instruction with her Spanish heritage learners, indicating that targeted instruction should have the biggest impact for heritage learners in the smallest amount of time. While the errors cover a number of characteristics, consonants, capitalization, vowels, and deletions, students made some errors more consistently than others. These specific errors can be targeted and taught in the classroom. There is minimal research looking at the effects of targeted or direct spelling instruction on heritage learning spelling, but there is research about direct or targeted spelling instruction in a language arts setting. Since German and English have similar phonographic and orthographic structure, but differ in their consistency, I am of the opinion that direct spelling instruction that has been shown successful with English speaking students will also prove helpful to these German heritage learners (Goswami *et al.*, 2005, p. 345).

Beaudrie (2011) also looked into how to most effectively teach spelling to Spanish heritage learners and found that, since the students were making specific errors, it was most beneficial to do a corpus-based analysis of errors and teach the spelling for those errors (p. 143). She recognizes that this method is different than traditional instructional practices, but can be beneficial because the targeted instruction will decrease instruction time and provide students with only the information needed (Beaudrie 2011, p. 143). Based on these results, it seems logical

to teach German heritage learners targeted spelling rules to improve their spelling in the most efficient way possible.

With this in mind, I presented the students with a dictation that I wrote to target certain German sounds and combinations of letters. (I targeted –ei, -ie, s+consonants, and the difference between –v, -w, and –f). I started the class with the dictation without addressing spelling, provided a spelling lesson in which specific features were targeted, and then gave the same dictation to see if there was any improvement. Only two of the four heritage learners were present, and the total amount of spelling instruction was about 25 minutes. This dictation is listed in Appendix J as ***Bauernhof***. For the purpose of the study, I only included the first dictation, pre spelling instruction, in the results.

From the two samples, the two learners made 49 and 37 spelling errors in the text of 81 words. After the spelling instruction, the mistakes dropped to 34 and 24, an improvement of 15 and 13 errors. The spelling instruction targeted the “ei” and “ie” sounds, as well as “w” and “v”, and the “ich” sound. Many of the remaining errors in the texts were errors that were not addressed. This brief look at targeted spelling instruction indicates that it has some benefits, however in the future, I would target fewer morphemes per lesson and involve more exercises. The students were asked to write words that were dictated to them, spell them out loud, and think of other words they know with the targeted morpheme.

If a teacher can identify the most common errors that the heritage learners make, they can tailor instruction to those errors and help the learners in the most efficient

way possible. Beaudrie (2011) supports the need for targeted spelling instruction in heritage learner programs, citing “limited instructional time” as a motivating factor, but points out that not only do instructors need to identify the most common misspellings, they also need to identify which misspellings occur most frequently in the target language (p. 142). By identifying errors that students frequently make and cross checking those with words or morphemes that frequently arise in the target language, an instructor can quickly and effectively teach correct spelling to heritage learners.

## **9. Conclusion**

This study was developed to look at a major issue in a middle school German classroom regarding heritage learners. These students, although being able to read and speak fluently, have serious difficulty spelling in German. The study aimed to see if there were any consistent errors and if those errors could be classified. The findings showed that these German heritage learners do make a number of spelling errors consistently, indicating that more intense and targeted spelling instruction needs to be addressed in the classroom. Students made many errors in regards to consonants, capitalization, vowels, as well as deletions within the words. Most commonly were errors confusing “w” in German with “v” and “v” with “f”, as well as mixing up the “ei” and “ie” spellings representing different combinations of sounds. In addition, capitalization was erratic, with no pattern to what was capitalized and what was not. Often students did not capitalize the first word of a sentence, which is a rule in both German and English, their primary language. Further instruction on what is capitalized in German, as well as the definition of a noun is needed. Additionally, instruction on how to hear the difference between a word with a single letter and a double letter is needed. This may prove to be more difficult, as the difference between these words, such as “den” and “denn”, or “das” and “dass” is subtle. Overall, students require much more attention when it comes to spelling in German, and may need to be instructed in spelling strategies specific to German. Further research would be needed to see if this targeted spelling instruction is effective for these learners.

## **10. Limitations**

This study has a number of limitations, the biggest being the small sample size. Only four students made up the corpus, which was also limited in size. The number of words presented and the small number of students to sample limits the validity of the study, but presents preliminary results that further research can be based off of. Additionally, a comparison between the heritage learners and traditional learners in the same class would be interesting, as it would provide insight into whether or not these spelling errors are characteristic of the heritage learners or common to all. As the students' teacher, looking at all the students' work indicates that these errors are more prevalent in the heritage learners, but further research would need to be conducted to see if that holds true.

## **Appendix A**

### **Dictation 1**

#### **Ostereier-Rekord**

Sie wollen nämlich die längste Ostereierkette der Welt basteln und damit ins Guinness Buch der Rekorde kommen. Dazu wollen sie an Ostermontag eine Kette aus 5300 ausgeblasenen und bemalten Hühner-Eiern auf dem Marktplatz aufhängen. (34 words)

#### ***Easter Egg Record***

*They wanted to craft the longest Easter egg chain in the world and with that, get a place in the Guinness Book of World Records. For this purpose they wanted to hang a chain of 5300 blown and painted chicken eggs in the market place.*



## **Appendix B**

### **Dictation 2**

Heute muss ich viel machen! Ich will spielen, aber meine Mutti sagt, dass ich erst meine Hausarbeit machen muss. Das macht kein Spaß! Ich muss mein Zimmer aufräumen, das Wohnzimmer staubsaugen, und das Geschirr spülen! Es wird ewig dauern, bevor ich spielen kann! Aber nächste Woche muss meine Schwester alles machen und ich nicht. Mein Vater hat gesagt, dass ich mit ihm Fußball spielen kann, wenn ich fertig bin. Ich soll dann gleich anfangen!

*Today I have to do a lot! I want to play, but my mom said that I have to do my chores first. That isn't fun! I have to clean my room, vacuum the living room, and wash the dishes! It will take forever before I can play! But next week my sister has to do everything and I don't. My dad said that I can play soccer with him when I am done. I should start now then!*

## **Appendix C**

### **Dictation 3**

#### **Obst und Gemüse machen fröhlich!**

Dass Obst und Gemüse gesund für den Körper ist, wissen wir ja schon lange. Jetzt ist klar: Es macht auch noch froh!

Forscher in Großbritannien haben herausgefunden, dass Obst und Gemüse uns fröhlicher macht.

Um zu diesem Ergebnis zu kommen, haben sie vorher 80.000 Leute gefragt, wie viel Obst und Gemüse sie täglich essen. Diejenigen, die am Tag regelmäßig mehrere Portionen zu sich nahmen, waren deutlich fröhlicher als diejenigen, die weniger frische Lebensmittel aßen. (74 words)

#### **Fruit and vegetables make people happy!**

*That fruit and vegetables are healthy for the body we have known for a long time. Now it's clear: It (they) also make (people) happy!*

*Researchers in Great Britain have discovered that fruit and vegetables make us happier.*

*In order to come to this conclusion, they previously asked 80,000 people how much fruit and vegetables they eat daily. The ones that had regularly more daily portions were considerably happier than the ones who ate less fresh food.*

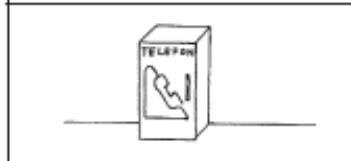
## Appendix D

**Free – writing exercise 1:** Students are instructed to write at least one sentence per picture in any tense they want. The original instructions instruct students to write in the simple past.

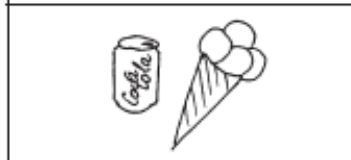
Schreiben Sie eine Geschichte im Perfekt.



15.00 Uhr:



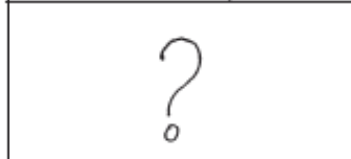
15.45 Uhr:



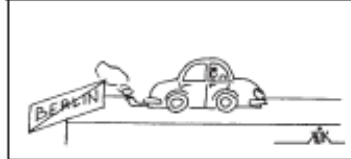
16.10 Uhr:



17.00 Uhr:



18.30 Uhr:



20.00 Uhr:

Perfekt: Bildergeschichte (3)  
Arbeitsblatt/OH-Folie

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## Appendix E

### Dictation 4 - Bauernhof

Ich wohne auf einem Bauernhof. Wir haben viele Tiere. Schweine, Kühe, Gänse, Pferde, und Ziegen sind für mich ganz normal. Ich muss auf meine Schweine aufpassen und sie füttern. Ich habe drei Schweine und weiß, was sie immer brauchen. Einmal hat ein Schwein ein Stein gefressen. Ich müsste den Tierarzt anrufen. Er hat gesagt, ich soll mein Schwein viel Wasser geben. Es gefällt mir sehr, auf einem Bauernhof zu wohnen und würde es nicht für den Welt verändern. (81 words)

#### *Farm*

*I live on a farm. We have a lot of animals. Pigs, cows, geese, horses and goats are totally normal for me. I have to take care of my pigs and feed them. I have three pigs and I know what they always need. One time one of the pigs ate a stone. I had to call the veterinarian. He said I should give my pig a lot of water. I really like living on a farm and wouldn't change it for the world.*

## Appendix F

### Consonant Errors

The errors are taken directly from the text and the correct German spelling is in the parentheses.

#### **v-w**

Evech (ewig)  
gelangvit (gelangweilt)  
vah (war)  
veis (weiß)  
Velt (welt)  
viert (wird)  
vill (will)  
vill (will)  
voche (Woche)  
vonzimmer  
(Wohnzimmer)  
vone (wohne)  
sheiveine (Schweine)  
verde (werde)  
shvein (Schwein)  
Shviene (Schweine)  
vonen (wohnen)  
sheiveine (Schweine)

#### **p-b**

gehaped (gehabt)  
hap (hab – haben)

#### **b-p**

Blatz (Platz)

#### **y-j**

ya (ja)  
yenmad (jemand)  
Yets (Jetzt)

#### **st – z**

Dastue (Dazu)

#### **c-k**

clar (klar)  
commen (kommen)  
recorde (Rekorde)

recorder (Rekorde)

#### **s-z**

gans (ganz)  
su (zu)

#### **z-s**

diezemn (diesem)  
Gezund (gesund)  
zint (sind)  
zie (sie)  
zie (sie)

#### **sh – ch**

ish (ich)  
Ish (ich)

#### **f-v**

fater (Vater)  
feel (viel)  
fil (viel)  
forher (vorher)  
fiele (viele)  
ferender (verändern)  
fiele (viele)

#### **Other**

auch (auf)  
bastleng (basteln)  
bastling (basteln)  
befor (bevor)  
Before (bevor)  
book (Buch)  
Datze (Dazu)  
Dawan (dauern)  
Dieanagen (Diejenigen)  
diegehnagen  
(diejenigen)  
down (dauern)  
er ghabnes (Ergebnis)  
est (es)  
Evech (ewig)  
ewich (ewig)  
fe (wie)  
fertich (fertig)  
fir (wir)  
fusball (Fußball)  
GeBlasennen  
(geblasenen)

gesacht (gesagt)  
gesacte (gesagt)  
geshire (Geschirr)  
habben (haben)  
herös gefundend  
kupper (Körper)  
langge (lange)  
merrerre (mehrere)  
gehaped (gehabt)  
mitt (mit)  
naexte (nächste)  
nexte (nächste)  
Pfart (fährt)  
potsieonen (Portionen)  
Reckorderd (Rekorde)  
regglemeshic  
(regelmäßig)  
sacht (sagt)  
schpilen (spielen)  
Shpass (Spaß)  
shpülen (spülen)  
szu (zu)  
taglish (täglich)  
unt (und)  
viert (wird)  
warfig (waren)  
wholen (wollen)  
whollen (wollen)  
whollen (wollen)  
wolhen (wollen)  
had (hat)  
had (hat)  
Kuche (Küche)  
fiedere (Pferde)  
zeit (sind)  
viere (viele)  
Ist (es)  
fourten (füttern)  
an ruffen (anrufen)  
baunhöf (Bauernhof)  
vueder (würde)  
vier (für)  
fer enden (verändern)

## Appendix G

### Capitalization Errors

The errors are taken directly from the text and the correct German spelling is in the parentheses.

(Hühner) eien (Hühner-Eieren)  
aber (Aber)  
auto (Auto)  
bach (Buch)  
Basteln (basteln)  
Before (bevor)  
Bemalten (bemalten)  
Bin (bin)  
book (Buch)  
cola (Cola)  
Das (das)  
Das (dass)  
Das (dass)  
Dawan (dauern)  
Dem (dem)  
Den (den)  
Der (der)  
Die (die)  
die (Die)  
Eine (Eine)  
eis (Eis)  
er ghabnes (Ergebnis)  
es (Es)  
Evech (ewig)  
fater (Vater)  
forcher (Forscher)  
frage (Frage)  
frau (Frau)  
fusball (Fußball)

fußball (Fußball)  
GeBlasennen  
(geblasenen)  
gesheft (Geschäft)  
gesher (Geschirr)  
geshire (Geschirr)  
Gezund (gesund)  
groß britanian  
(Großbritannien)  
haus (Haus)  
hausarbite (Hausarbeit)  
hunan eiern (Hühner-Eiern)  
huneriene (Hühner-Eieren)  
ich (Ich)  
Ich (ich)  
Ich (ich)  
Ich (ich)  
Ich (ich)  
Ich (ich)  
Ich (ich)  
kette (Kette)  
kupper (Körper)  
lute (Leute)  
man (Mann)  
man (Mann)  
man (Mann)  
markplatz (Marktplatz)  
markt (Markt – Marktplatz)  
marktplatz (Marktplatz)  
mutti (Mutti)  
mutti (Mutti)  
obst (Obst)  
oster (Oster)  
papa (Papa)  
park (Park)  
potsieonen (Portionen)  
recorder (Rekorde)

shwester (Schwester)  
Sie (sie)  
telefon (Telefon)  
voche (Woche)  
vonzimmer  
(Wohnzimmer)  
welt (Welt)  
welt (Welt)  
wöhe (Woche)  
yenmand (Jemand)  
zimer (Zimmer)  
baueanhof (Bauernhof)  
cue (Kühe)  
gense (Gänse)  
pferde (Pferde)  
ziegen (Ziegen)  
sheiveine (Schweine)  
einmal (Einmal)  
shvein (Schwein)  
stein (Stein)  
tieratzt (Tierarzt)  
ehr (Er)  
Shviene (Schweine)  
es (Es)  
bauanhof (Bauernhof)  
weld (Welt)  
baunhöf (Bauernhof)  
tiere (Tiere)  
gensee (Gänse)  
fiedere (Pferde)  
ziegen (Ziegen)  
schwienne (Schweine)  
stein (Stein)  
tierazt (Tierarzt)  
schwien (Schwein)  
wasser (Wasser)  
baunhöf (Bauernhof)

## Appendix H

### Vowel Errors

The errors are taken directly from the text and the correct German spelling is in the parentheses.

#### i-ei

gliche (gleich)  
hausarbite (Hausarbeit)  
in (ein)  
kine (kein)  
kine (keine)  
mine (mein)  
mine (mein)  
Mine (mein)  
mine (meine)  
mine (meine)  
mine (meine)  
mine (meine)  
mine (meine)  
mine (meine)  
mine (meine)  
mine (meine)  
mine (meine)

#### i – ie

fil (viel)  
spilen (spielen)  
spilen (spielen)  
vile (viel)

#### e – ä

lengste (längste)  
lengstie (längste)  
nemlic (nämlich)  
nemlich (nämlich)  
nexte (nächste)

#### e – a

bemelten (bmalten)  
Dieanagen (Diejenigen)

#### e-ie

fe (wie)  
spelian (spielen)  
spelian (spielen)

#### e – i

ben (bin)  
Evech (ewig)  
gesher (Geschirr)

#### a-e

allas (alles)  
dam (dem)  
Keta (Kette)  
labensmitte  
(Lebensmittel)

#### a-ä

hangen (aufhängen)  
hangen (aufhängen)  
langstie (längste)  
Pfart (fährt)  
taglish (täglich)  
taglish (täglich)

#### u-ü

blüe (blau)  
fur (für)  
huneriene (Hühner-  
Eiern)  
spullen (spüllen)

#### Other

aufroumen (aufräumen)  
aufroumin (aufräumen)  
bach (Buch)  
Bouch (Buch)  
britanian (Britannien)  
Dawan (dauern)  
diegehnagen  
(diejenigen)  
diewinager (die  
weniger)  
doitlich (deutlich)  
fruhlicher (fröhlicher)  
Frund (freund)  
geshire (Geschirr)  
herös gefundend  
(herausgefunden)  
Huet (heute)  
kupper (Körper)

lute (Leute)  
moct (macht)  
naexte (nächste)  
Om (um)  
ouse (aus)  
potsieonen (Portionen)  
spelian (spielen)  
viert (wird)  
wöhe (Woche)  
Schwäne (Schweine)  
cue (Kühe)  
gense (Gänse)  
futern (füttern)  
wise (weiß)  
emer (immer)  
fier (wir)  
ferender (verändern)  
gefelt (gefällt)  
meir (mir)  
minen (meinen)  
bauanhof (Bauernhof)  
verde (würde)  
aüf (auf)  
baunhöf (Bauernhof)  
veile (viele)  
Kuche (Kühe)  
gensee (Gänse)  
fiedere (Pferde)  
zeit (sind)  
viere (für)  
aüf (auf)  
miene (meine)  
Schwiene (Schweine)  
aüf passen (aufpassen)  
fourten (füttern)  
Scheine (Schwein)  
wieß (weiß)  
ema (immer)  
schwiene (Schwein)  
gefraseen (gefressen)  
muste (müsste)  
schwien (Schwein)

geban (geben)  
gefalt (gefällt)  
sier (sehr)

aüf (auf)  
baunhöf (Bauernhof)  
vueder (würde)

vier (für)  
fer enden (verändern)



## Appendix I

### Deletion Errors

The errors are taken directly from the text and the correct German spelling is in the parentheses.

britanian (Britannien)  
dan (dann)  
dan (dann)  
Das (dass)  
das (dass)  
das (dass)  
Das (dass)  
eien (Eiern)

faren (fahren)  
forcher (Forscher)  
fro (froh)  
fulicher (fröhlicher)  
gesher (Geschirr)  
geshire (Geschirr)  
im (ihm)  
im (ihm)  
kan (kann)  
lute (Leute)  
mus (muss)  
namen (nahmen)  
sol (soll)  
spilen (spielen)  
wen (wenn)  
wen (wenn)  
wholen (wollen)  
wohnzimer  
(Wohnzimmer)

wolhen (wollen)  
zimer (Zimmer)  
auf pasen (aufpassen)  
futern (füttern)  
emer (immer)  
muste (müsste)  
gefelt (gefällt)  
minen (meinen)  
ferender (verändern)  
ema (immer)  
gefraseen (gefressen)  
muste (musste)  
tierazt (Tierarzt)  
gefalt (gefällt)  
sier (sehr)  
baunhöf (Bauernhof)  
fer enden (verändern)

## Appendix J

**Errors in their original context** – The original German is listed in bold, with German corrections marked in italics, and an English gloss provided in plain text.

### Ostereier-Rekord

**Sie wollen nämlich die längste Ostereierkette der Welt basteln und damit ins Guinness Buch der Rekorde kommen. Dazu wollen sie an Ostermontag eine Kette aus 5300 ausgeblasenen und bemalten Hühner-Eiern auf dem Marktplatz aufhängen.**

(34 words)

*They wanted to craft the longest Easter egg chain in the world and with that, get a place in the Guinness Book of World Records. For this purpose they wanted to hang a chain of 5300 blown and painted chicken eggs in the market place.*

1. **Sie wolen nemlic die lengste Ostereier kette der welt bastleng und damit ins**  
*wollen nämlich längste Ostereierkette Welt basteln*

*They wanted to craft the longest Easter egg chain in the world and with that, get a*

**Guniss book der recorder kommen. Dastue wolhen Sie an oster montag eine**  
*Guinness Buch Rekorde Dazu wollen sie Ostermontag*

*place in the Guinness Book of World Records. For that purpose they wanted to*

**kette aus 5300 aus geblasenen und bemaltn huneriene auf der markplatz**

*Kette ausgeblasenen bemalten Hühner-Eiern dem Marktplatz*  
*chain of 5300 blown and painted chicken eggs in the market place*

**auf hangen.**

*aufhängen. (20 errors – 58.8%)*

*hang.*

2. **Sie whollen nemlich Die lengste Ostereier Kette Der welt Basteln und damit**  
*wollen nämlich die längste Ostereierkette der Welt basteln*  
**in Guinness Bouch Der recorde komen. Da zu wholen sie an oster Montag eine**  
*ins Buch der Rekorde kommen. Dazu wollen Ostermontag*  
**Kette ouse 5300 aus GeBlasennen und Bemalten Hühner eien auf Dem markt**  
*aus ausgeblasenen bemalten Hühner-Eiern dem*  
**Blatz auf hängen.**

*Marktplatz aufhängen.*

*(23 errors – 67.6%)*

3. **Sie wollen namelich die lengstie Ostereier Kette der Velt bastling und da mit**  
*nämlich längste Ostereierkette Welt bastlen damit*  
**ins Guniess bach der Reckorderd kommen. Datze whollen sie und Oster**  
*Guinness Buch Rekorde Dazu wollen an Ostermontag*  
**Montag eine Keta 5300 ausgeblissenen und bemelten hunan eiern auch**  
*Kette aus ausgeblasenen bemalten Hühner-Eiern auf*  
**dem markplatz auf hangen.**

*Marktplatz aufhängen.*

*(21 errors – 61.7%)*

Average errors in % - 62.7 (21.7 errors per 34 word text)

## Berlin Geschichte

### 1. Der man pfart zu Berlin gans shnell

*Mann fährt ganz schnell* (4/7 errors – 57.1%)

The man drives to Berlin really quickly.

### 2. eine man rufte eine Hospital

*Ein Mann ruft ein Krankenhaus an.* (5/5 errors – anrufen is one word – 100%)

A man calls a hospital.

### 3. ich hap mit mine papa zu Den Ice creme gesheft Ice creme geholete.

*Ich hab(e) meine Papa zu dem Eis Geschäft Eis geholt.* (10/13 errors - 76.9%)

I got with my father to the ice cream store ice cream (got)

### 4. Die frau und der man lieben einander.

*Frau Mann* (2/7 errors – 28.6%)

The woman and the man love each other.

### 5. yemmad hat eine frage gehaped

*Jemand Frage gehapt.* (3/5 errors – 60%)

Someone had a question

### 6. die faren von Berlin nach Hause.

*Die fahren* (2/6 errors – 33.3%)

They drove from Berlin home.

### 7. Ich bin fahren in mein blüe auto.

*mein blaues Auto.* (3/7 errors – 42.9%)

I drove in my blue car.

### 8. Ich gekauft in telefon.

*ein Telefon.* (2/4 errors – 50%)

I bought a telephone.

### 9. Ich gekauft in cola und ein eis.

*ein Cola Eis.* (3/7 errors – 42.9%)

I bought a cola and an ice cream.

### 10. Mein Frund und Ich laufen in dam park.

*Freund ich dem Park* (4/8 errors – 50%)

My boyfriend and I walk in the park

### 11. Ich vah so gelangvit

*war gelangweilt.* (2/4 errors – 50%)

I was so bored

### 12. Ich veis du masen

*weiß ?* (2/4 errors – 50%)

I know you ???

### 13. Dan Ich lossegefahren Berlin.

*Dann ich losgefahren* (3/4 errors - 75%)

Then I left Berlin.

Average errors in % - 55.13%

### **Obst und Gemüse machen fröhlich**

**Dass Obst und Gemüse gesund für den Körper ist, wissen wir ja schon lange. Jetzt ist klar: Es macht auch noch froh!**

**Forscher in Großbritannien haben herausgefunden, dass Obst und Gemüse uns fröhlicher macht.**

**Um zu diesem Ergebnis zu kommen, haben sie vorher 80.000 Leute gefragt, wie viel Obst und Gemüse sie täglich essen. Diejenigen, die am Tag regelmäßig mehrere Portionen zu sich nahmen, waren deutlich fröhlicher als diejenigen, die weniger frische Lebensmittel aßen. (74 words)**

*That fruit and vegetables are healthy for the body we have known for a long time. Now it's clear: It (they) also make (people) happy!*

*Researchers in Great Britain have discovered that fruit and vegetables make us happier.*

*In order to come to this conclusion, they previously asked 80,000 people how much fruit and vegetables they eat daily. The ones that had regularly more daily portions were considerably happier than the ones who ate less fresh food.*

### **1. Dass Obst und Gemüse Gesund für den Körper ist, wissen wir ja schon lange. Jetzt**

*gesund für Körper wir ja schon lange. Jetzt*

**ist klar: es macht auch noch froh! Forscher in Großbritannien haben herausgefunden,**

*klar: Es macht froh Forscher Großbritannien haben herausgefunden,*

**das Obst und Gemüse uns fröhlicher macht. Um zu diesem Ergebnis**

**kommen, haben sie vorher 80,000 Leute gefragt, wie viel Obst und Gemüse sie täglich**

**essen. Diejenigen, die am Tag regelmäßig mehrere Portionen zu sich nahmen,**

**warfen deutlich fröhlicher als diejenigen, die weniger frische Lebensmittel aßen.**

*waren deutlich fröhlicher diejenigen, die weniger frische Lebensmittel aßen.*

(46 errors – 62.2%)

### **Diktat – Hausarbeit**

**Heute muss ich viel machen! Ich will spielen, aber meine Mutter sagt, dass ich erst meine Hausarbeit machen muss. Das macht kein Spaß! Ich muss mein Zimmer aufräumen, das Wohnzimmer staubsaugen, und das Geschirr spülen! Es wird ewig dauern, bevor ich spielen kann! Aber nächste Woche muss meine Schwester alles machen und ich nicht. Mein Vater hat gesagt, dass ich mit ihm Fußball spielen kann, wenn ich fertig bin. Ich soll dann gleich anfangen!**

*Today I have to do a lot! I want to play, but my mom said that I have to do my chores first. That isn't fun! I have to clean my room, vacuum the living room, and wash the dishes! It will take forever before I can play! But next week my sister has to do everything*

*and I don't. My dad said that I can play soccer with him when I am done. I should start now then!*

Sample 1.

**Huet muss ish feel machen! Ish vill Spelian aba mine mutti sacht, das ich erst mine**  
*Heute ich viel Ich will spielen aber meine Mutti sagt, dass meine*  
**hausarbite machen mus. Das macht kine Spass! Ich muss mine zimmer aufroumin,**  
**das**  
*Hausarbeit muss. kein Spaß! meine Zimmer aufräumen, dass*  
**vonzimmer staubsaugen, und das gesher spullen! Es viert Evech down, befor ich**  
**spelian**  
*Wohnzimmer Geschirr spülen! wird ewig dauern, bevor spielen*  
**kann. Aba nexte voche muss mine shwester allas machen unt ich nicht. Mine fater**  
**hat**  
*Aber nächste Woche meine schwester alles und Mein Vater .*  
**gesact, das ich mitt im fusball spelian kan, wen ich fertich ben. Ich sol dan gleich**  
*gesagt, dass mit ihm Fußball spielen kann, wenn fertig bin soll dann*  
**anfangen!**

(49/74 errors – 66.2%)

Sample 2.

**Huete muss Ich vile machen! Ich vill schpilen, aber mine mutti sagte, Das Ich erst**  
**mine**  
*Heute ich viel will spielen meine Mutti sagt, dass ich meine*  
**haus arbeit machen muss. Das machet kine shpass! Ich muss mine zimeraufroumen,**  
**Das**  
*Hausarbeit macht kein Spaß! mein Zimmer aufräumen, das*  
**whonzimer staubsaugen, und das geshire shpülen! es wird ewich Dawan Before Ich**  
*Wohnzimmer Geschirr spülen! Es ewig dauern bevor ich*  
**spilen kann! aber naexte wähe muss mine Schwester alles machen und Ich nicht.**  
**mine**  
*spielen Aber nächste Woche meine ich Mein*  
**vater hat gesacte, Das Ich mit im fußball spilen kann, wen ich fertig Bin. Ich soll dan**  
*Vater gesagt, dass ich ihm Fußball spielen wenn bin dann*  
**glich anfangen!**  
*gleich*

(52/74 errors – 70.3%)

### **Diktat – Bauernhof**

Ich wohne auf einem Bauernhof. Wir haben viele Tiere. Schweine, Kühe, Gänse, Pferde, und Ziegen sind für mich ganz normal. Ich muss auf meine Schweine aufpassen und sie

füttern. Ich habe drei Schweine und weiß, was sie immer brauchen. Einmal hat ein Schwein ein Stein gefressen. Ich müsste den Tierarzt anrufen. Er hat gesagt, ich soll mein Schwein viel Wasser geben. Es gefällt mir sehr, auf einem Bauernhof zu wohnen und würde es nicht für den Welt verändern. (81 words)

*I live on a farm. We have a lot of animals. Pigs, cows, geese, horses and goats are totally normal for me. I have to take care of my pigs and feed them. I have three pigs and I know what they always need. One time one of the pigs ate a stone. I had to call the veterinarian. He said I should give my pig a lot of water. I really like living on a farm and wouldn't change it for the world.*

### Sample 1

**Ich vone auf einem baueanhof. Wiere haben fiele tiere. Schwäne, cue, gense, pferde und**

*wohne Bauernhof Wir viele Tiere Schweine, Kühe, Gänse, Pferde*  
**ziegen zint fur mich gans normal. Ich muse auf meine sheiveine auf pasen und zie futern.**

*Ziegen sind für ganz muss Schweine aufpassen sie füttern*  
**Ich habe tre sheiveine und wise, was sie emer, was zie. einmal had ein shvein ein stein**

*drei Schweine weiß immer sie Einmal hat Schwein Stein*  
**gefresen. Ich musste den tieratzt anrufen. ehr had gesact, ich sole meine Shviene fiele gefressen musste Tierarzt Er hat gesagt soll Schweine viel**  
**Waser geben. es gefelt meir ser, auf minen bauanhof tu vonen und verde es nicht fier den**

*Wasser Es gefällt mir sehr meinen Bauernhof zu wohnen würde für*  
**weld ferender.**

*Welt verändern. (49/81 errors – 60.5%)*

### Sample 2

**Ich wohne aüf einem baunhöf. Wie haben veile tiere. Schweine, Kuche, gensee, fiedere**

*auf Bauernhof. Wir viele Tiere Kühe Gänse Pferde*  
**und ziegen zeit viere mich ganz normal. Ist muss aüf miene Schwiene aüf passen und sie**

*Ziegen sind für Ich auf meine Schweine aufpassen*  
**fourten. Ich habe drei Scheine und wieß, was sie ema. Ein mal hat ein schwiene ein stein**

*füttern Schweine weiß immer Einmal Schwein Stein*  
**gefraseen. Ich musste den tierazt an ruffen. Er hat gesagt, ich soll mein schwien viel gefressen musste Tierarzt anrufen Schwein**

**wasser geban. Es gefalt mir sier, aüf einem baunhöf zu wohnen und vueder es nicht vier**

*Wasser geben gefällt sehr auf Bauernhof würde für*

**den Welt fer enden.**

*verändern* (37/81 errors – 45.7%)

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